Bartlett (E)

AN

INTRODUCTORY LECTURE

ON THE

OBJECTS AND NATURE

OF

MEDICAL SCIENCE:

DELIVERED

In the Hall of the Medical Department of Transylvania University,

On the 3d day of November, 1841,

BY ELISHA BARTLETT, M. D.
Professor of the Theory and Practice of Medicine in Transylvania University.

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CORRESPONDENCE.

MEDICAL DEPARTMENT,
NOVEMBER 10, 1841.

Prof. E. BARTLETT.

RESPECTED SIR:—We, the undersigned, were appointed by the members of the Medical Class, a committee to request in their behalf a copy of your Introductory Address for publication. We are further instructed to express to you the united sense of the Class in the deep feelings of admiration which its delivery inspired—the universal high appreciation of your profound professional research and refined accomplishments, and the unbounded gratification which your recent accession to the institution has created.

Permit us, sir, in performing this agreeable duty, to add our undivided assurances of the highest esteem and friendship.

WILLARD F. TAFT,
JAMES BOYKIN,
JNO. PATTERSON,
} Committee.

LEXINGTON, NOVEMBER 10, 1841.

GENTLEMEN:—In compliance with your request, I herewith transmit to you a copy of my Introductory Address.

I beg you to receive for yourselves, and to express to the Class, my sincere acknowledgments for the kind and complimentary manner in which you have spoken of myself, personally, and of my lecture;—and my assurances, also, that so long as I shall have the honor of constituting one of the Faculty of this Institution, my efforts shall be earnest and constant for the promotion of its interests, and for the welfare of its pupils;—especially in inculcating sound, philosophical and practical principles in medicine, founded, exclusively, on the accurate observation and the rigorous analysis of appreciable phenomena; and in opposing the adoption and spread of those multiform and hypothetical systems of pathology and therapeutics, which have ever exerted, and which still continue to exert so disastrous an influence upon that noble science and that beneficent art, to the cultivation and practice of which our lives are to be devoted.

I am, very truly, your friend,

ELISHA BARTLETT.

To Messrs. W. F. TAFT, J. BOYKIN, J. PATTERSON.

LECTURE.

It becomes me, in this place, and at this time, to make this, my first utterance, which in all honesty and sincerity I now do, a hearty expression of thanks to my colleagues, and to the honorable members of the board of trustees of Transylvania University, for their kind consideration and regard in calling me to the responsible station which I here occupy; and to pledge to them, which in like honesty and sincerity I now do, and to the service of the Institution with which they are connected and over which they preside, the full consecration of such ability as has been vouchsafed me.

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Gentlemen of the Medical Department of Transylvania University:—

I am to teach the Theory and Practice of Medicine; and I propose to devote this, the first hour of our official relationship, as teacher and pupils, to an explicit statement of my own conceptions of *some* of the fundamental duties which belong to my department. The subject of my Introductory Lecture will be this:—*The Nature of the Science and the Art of Medicine.* I shall endeavor to show you *in what* this science and this art *consist;*—to define their true meaning;—to ascertain, if possible, and to mark out their legitimate boundaries and relations.

Considering the miscellaneous and, to a great extent, the non professional character of my audience, I might, perhaps, have availed myself of the very proper and legitimate usage of occasions like the present, and have chosen some topic for discussion, more generally interesting in itself, and especially more intelligible to those of my hearers who are not supposed to be familiar with matters of a strictly scientific or professional nature. Under different circumstances, I might have followed my tastes and inclinations in this respect, but coming before the University for the first time, as a teacher of science, I have felt myself constrained, by the circumstances of my position, to confine myself to a subject of a strictly scientific and professional character, and among those which offered themselves for my selection, I cannot im-

agine one more appropriate to the present occasion than that which I have chosen;—I do not know any that is more important.

I do not propose to occupy your time with any account of the particular objects, and of the relations to each other, of the several primary departments of medical science, such as anatomy, physiology, pathology, therapeutics, &c.—These subjects are matters of elementary instruction; they are generally recognized, well established, and well understood; so that they can hardly fail, even if they are not formally stated, either in books or in lectures, either by myself or by my colleagues, of becoming familiar to you. I have another object, and that is—to repeat, in substance, what I have already said, to ascertain the essential and true character of medical science; to find out in what it consists; what are its elements; what are its objects of investigation, and what the true methods are by which we can attain them. In short, and in the plainest possible words, in this our peculiar province of Practical Medicine, what is it that we wish to know? what is it that we can know? and what are the true and best means of arriving at this knowledge? The development and illustration of the idea, thus variously and emphatically expressed, will constitute the business of my lecture.

There is a very wide difference, so far as this matter is concerned, between all the other sciences and our own. In all the others, the legitimate objects of research are well ascertained; and the true and only efficient methods of investigation are universally admitted and agreed upon. The objects and nature of the several sciences are settled. The direction which should be given to our powers of research is fixed, and the limits, within which they are necessarily restrained, are already defined. In medicine this is far enough from being the case. There is no general and clear conception of the real nature and the legitimate objects of medical science, and of the best means of attaining these objects: there is no common and strong conviction in the minds of medical men of the essential character of the science and the art with which they are concerned.

But further,—to a very great extent not only are the nature and the objects of medical science but dimly and obscurely understood, they are wholly *mis*understood. Our science, to a degree, far greater, I apprehend, than many of us are aware of, is still corrupt with the scientific and philosophical vices of alchemy, for instance, during the middle ages. An enormous amount of intellectual labor is annually expended upon the solution of problems in medicine as utterly idle and visionary, as entirely without the domain of legitimate science, as were those of the universal solvent and the elixir of life. If these opinions are sound,

and my conviction that they are so, is as entire and settled as any that my mind ever entertained, the importance, nay the necessity of endeavoring to correct and to establish our notions must be obvious enough.

Before I proceed to announce, in the shape of a formula, or to define in set terms, the objects and nature of medical science, it may, perhaps, prepare our minds for an easier and more distinct comprehension of the subject, if we look, for a moment, at some of the other sciences, the objects and nature of which are so much better ascertained and agreed upon. With the light of analogy, derived from these, we shall readily dispel much of the darkness which yet envelopes our own.

Among these sciences there is no other one so closely and so variously related to medicine as chemistry. It is very intimately connected with many of the processes that are carried on in the living economy, so that it becomes an efficient handmaid of physiology; and it furnishes us with many of our most potent remedies of disease. For these, and for other reasons, it makes up a part of all thorough systems of medical instruction, and every medical man is supposed to be more or less conversant with it. Now, let us propound the same questions in relation to chemistry, the solution of which, in relation to medicine, constitutes the subject of this lecture. What is the nature of Chemistry? What are its objects? What does it aim to accomplish, and by what means? Manifestly this:—to ascertain the phenomena which result from the action upon each other of the ultimate atoms of the different substances of which the material world is composed; and of the action, also, upon these atoms, of certain other bodies or agents, such as heat, light, electricity. The object of the science, I say, is to ascertain their phenomena, to analyze, classify and arrange them. It is manifestly this, I repeat it, *and no other*. The molecular particles of which the different kinds of matter are composed, when presented to each other, or when brought into the closest attainable neighborhood to each other, so act and re-act upon, combine with and modify each other, as to impart and acquire an almost infinite variety of new properties. It is the object of chemistry to investigate the laws and the results—the *phenomena*—of these combinations—these actions and reactions. This is its legitimate and appropriate end:—It has no other.

Let us look, in the same way, at that beautiful domain lying along the confines which seperate the department of strict physical from that of chemical science—shading off into the two, by delicate and imperceptible gradations, like the colors of its own spectrum into each other,—occupied by optics. What are the objects of this science? What are its

aim and end? What does it profess to do, and by what means and instrumentalities does it work? Manifestly, again, its purpose is to investigate and ascertain the *phenomena* of light:—its composition—its properties—its relations to the various forms of matter. These phenomena, like those of chemistry, after they have been ascertained and verified by experience, it arranges and classifies, and these *classifications* of the phenomena, constitute the *laws* or *principles* of the science.

It would be easy to extend this kind of illustration—it would be easy to carry it through the whole circle of the physical and natural sciences; but we have gone far enough, perhaps, to answer our present purpose. In these and in all, the great, leading, legitimate purpose of the science—whatever it may be—its end and aim—consist in the investigation and ascertainment of the actual phenomena with which the science is concerned; and in the analysis and arrangement of these phenomena in natural and convenient classes.

The true purpose of all *medical* science differs, in no respect, from that of the other sciences. I shall speak only of that department to which our own investigations are to be more particularly confined. The chair which I occupy and the branch which we are to study is designated by the title of "The Theory aud Practice of Medicine." It embraces the entire natural history of disease, and the best methods for its mitigation and removal. Its legitimate object is the investigation and ascertainment of all the phenomena of morbid action—the relations of these phenomena to each other, and to their causes—and, also, to those substances and agents in nature which are endowed with the property of influencing and modifying them. It is possible enough, that this announcement may seem to you, after all this apparent flourish of trumpets, no very momentous or important affair; but let me assure you, that, simple as it may seem, you will find it to be a principle pregnant, like all true principles, with almost infinite results. You will find too, as we go along in our course, that it has always been and that it still is, very extensively—with some qualification, I might say almost universally, disregarded. Let me repeat it. The great purpose of that department of medical science, with which we are concerned, its appropriate and legitimate end is this:—to study and to ascertain the *actual*, *appreciable* phenomena of morbid action—the reciprocal relations of its multifarious and manifold modifications—with the influences which excite, and with the substances and agents which are capable of modifying it. In this investigation of these phenomena and of these relations; and in their arrangement and classification, does the science of our department consist.

I have said that the doctrine, which I have thus stated, is very far from being generally recognized and acted upon, by the members of our profession; that it is not received and admitted as a practical and operative principle, as it is in the other sciences; and that, therefore, there is great need for insisting upon its truth and its importance. I do not mean, however, to say that it is wholly denied or disregarded, or that it is not now and has not always been, to a considerable extent, admitted and acted upon. So far as our science is at all a science. So far as our art is of any real service to humanity, it is in consequence of following this true and only legitimate mode of research. What I mean to say is this: that the principle has never been generally and fully recognized, and that it has never, except in a few instances, been thoroughly carried out to its entire and genuine results. I mean to say, furthermore, that not only have the true nature and objects of medical science been but imperfectly and impartially admitted; but that there has been mixed up, even with this imperfect and partial recognition of the truth, an all pervading and enormous amount of *mis*apprehension and error. This misapprehension and this error you will find running through the entire records of our science, from the time of Hippocrates to the present.

Before proceeding any further in the development of my subject, I will explain to you what I mean by these remarks. The error of which I speak grows out of a radical misapprehension of the real and essential character of our science, of its legitimate objects, and of the true methods of attaining them. It consists, substantially, in a departure from the investigation of *phenomena and their relations*, and in an indulgence in speculations that can only be characterized by the terms metaphysical or transcendental. In this wrong spirit, under the influence of this mistaken and false view of the nature and objects of medical science—*not the phenomena of morbid action*—and their real and appreciable relations:—not their ascertainable causes—their reciprocal action:—their consequences and results:—but their *intimate, ultimate* and *essential nature*—the subtle and inscrutable processes and agencies through which, and by which, they were carried on, became the objects of enquiry. This is the most glaring fact in the history of our science. All the multitudinous and colossal mass of medical literature which in manuscript and in print has been piling up, through the march of ages, bears a running and perpetual testimony to the truth of this assertion. Of the seven thousand volumes, which are marshalled on the shelves of the adjoining library, there is but an insignificant proportion which do not contain the record and the proof of

what I say. And the worst of it is, that the evil is but little less universal now than it formerly was. You will find the evidence of it quite as strong in the fresh and plump octavos, with their delicate and embossed covers of cotton and wood, just issued from the Boston and New York presses, as you will in the clasped and ponderous folios of Paris and Geneva.

When the actual phenomena of diseases have been ascertained, by accurate and thorough observation, we next proceed to analyze these phenomena, and to arrange or classify them according to their intimate and obvious relations. This arrangement and classification of the phenomena of disease constitute the true laws of disease, the real and veritable *principles* of *pathology*. The pathological law is identical with the generalization of the phenomena; the two terms of phraseology express precisely the same fact—they mean, exactly the same thing. The *universality of the fact* is identical with the *principle*. The same thing is true in all the physical and natural sciences.

In chemistry, observation shows that when dissimilar bodies unite in their ultimate atoms, the resulting compound possesses properties unlike those belonging to the original constituents. This is the *law* of the science, and the law consists, simply, in the expression of a universal fact. In like manner observation shows that these dissimilar atoms unite with each other, in certain fixed quantities or proportions. This constitutes another of the principles of chemical science, but the principle is only the expression of an invariable and uniform series of phenomena. We may have been in the habit of regarding the principle, or the law, as something else than the universal fact, or the invariable series of phenomena,—as something separate from the latter—beyond it—above it—superior to it—but if we analyze the matter, we shall find no such thing. The too expressions have but a single meaning.

It is precisely so with the laws of heat. State them as you please,—in all their infinite and beautiful variety—and you have done simply this, and no more—you have given distinct and formal expression to the existence of a universal fact; you have declared, in the shape of a formula or an axiom, the existence of some certain, fixed, invariable series of phenomena. Even the great and sublime law of attraction or gravity, like those to which I have just referred, is nothing else than the statement of a universal fact.

It is important that I should notice a difference—a very great and wide difference, which exists between the more exact physical sciences, and medicine. If the real nature and objects of the physical sciences,

on the one hand, and of medical science on the other, be, as I have endeavored to show, essentially alike; if the great purpose of them all is the study and ascertainment of the phenomena with which each is especially concerned—if there is no radical and essential difference between them and our own science, how comes it, you will be likely to ask me, that there is such a wide difference between the results to which we have arrived? How comes it, that in the physical sciences, every thing is positive, fixed;—their great laws ascertained and universally admitted, susceptible of expression in determinate axioms, and formulæ, every where recognized as absolutely and indisputably true; while in medicine, to a very considerable degree, at least, every thing is quite otherwise—doubtful, fluctuating, indeterminate—but few, if any of its laws thoroughly ascertained and universally admitted? This question is a reasonable one, and I will endeavor to answer it.

The chief and obvious cause of the difference against medicine and in favor of the other sciences is this: *the imperfection of our means of observation.* This imperfection is very great—it meets us on every hand—it runs through every part of our science. It is very difficult—to a great extent it is quite impossible, with these imperfect means of observation, for us to get at the phenomena of disease. We are obliged to study certain series, or natural groups, or combinations of phenomena, in parts, in fragments. Some of these phenomena may be beyond our reach—others may be fugitive, and not easily appreciated.—Beside this, the phenomena themselves are constantly modified by disturbing causes, the nature and operation of which we do not understand. We know only, from the supervention of certain other phenomena, that the disturbing cause is present, but in what it consists, or how it acts, it may be wholly impossible for us to know.

The ultimate laws and principles, connected with, and arising from the vital forces, and their relations, are just as absolute and immutable, as those connected with the sciences. A. B. yesterday, was seized with what we call fever and ague. The vital forces, connected with his living organization, had been peculiarly impressed by a series of complex influences, many of them very obscure, and but little or not at all known to us—the result of which was that aggregate and succession of morbid actions, which we call intermittent fever. Most unquestionably, under precisely the same circumstances, the same phenomena would always be found. The difficulty lies here:—the phenomena, with which we have to deal, are so numerous—so obscure—so fugitive—their relations with each other and with their causes are so complex—so subtle—so inscrutable; and our means of investigation are so partial and imperfect

that even under the most favoring circumstances, when we have done all that we can do to insure accuracy, when we have eliminated from our process, so far as we are able, all possible sources of error, although some of our results may be positive, there will necessarily remain others, more or less doubtful and contingent, while many will have escaped us altogether.

I ought not to pass from this part of my subject without adding, that our results in the investigation of disease have been only approximative and unsatisfactory, to a very great extent, not from the inherent difficnlties of the case, but from our neglect to pursue the only right method, and to avail ourselves of all the means which are really within our reach.

I need hardly say to you how entirely different from all this it is in the physical sciences. Look at the chemist. He is sure of his results because he is sure ef the circumstances and conditions in the midst of which he produces them. His processes are not liable to be disturbed by the intervention of agencies, which he can neither comprehend, nor control, as is so constantly the case with the physician. Neither time nor place work any changes in his materials nor in their relations.—Berzelius in his cabinet in Sweden, and Professor Peter in his Laboratory in Lexington, separating a volume of atmospheric air into its elements, know with entire certainty before hand, that their results will be the same. The prism with which Sir Isaac Newton unwove the seven fold web of light, would have given the same results when the bow of promise was first set in the Heavens, and it will continue to do so in all coming time.

But, it is important to observe, that this circumstance does not, after all, constitute any real difference in the *nature* and *objects* of the two classes of science. The manifold difficulties of investigation in medical science, do not in any way change the *objects* or the *nature* of the *investigation itself*. The phenomena of disease and their relations—these and these *only* are the legitimate objects of our research—the investigation—the analysis and the arrangement of these alone constitute the science of medicine. It is in vain to seek for it any where else.

There is one aspect in which the phenomena of the living economy, both in health and disease, approach very nearly in invariableness and absoluteness to those of inanimate matter. I mean when these phenomena are considered in great aggregates—on a vast scale. When this is done, we see these laws developing and manifesting themselves, with a majestic regularity, like that which caries the planets round

the sun. Nothing can be more doubtful than the duration of life, for instance, in the case of a particular individual, but when the observation of this *fact*, the duration of life, is extended from one to a million or to a hundred millions, the *average period* becomes one of great certainty and correctness. Of two individuals born on the same day, and with apparently equal prospects of life, one may finish his career in an hour, and the other may reach the age of a century of years: but of a hundred thousand born in a given continuous period of time, the mean duration of life in the first fifty-thousand, will not probably vary, to *any appreciable extent*, from that in the second fifty-thousand. The whole science of vital statistics consists of these extensive observations and generalizations. The same process may be applied, to some extent, to the phenomena of disease, and the result will be certain *general, approximative* laws—laws of *degree* or *proportion*, as we may call them. For instance, although nothing can be more uncertain, in the case of an individual, who is exposed to the causes of tuberculous disease, in which side of the chest, the morbid disposition will commence, still of a very large number, say a thousand, it may very confidently be predicted, that two thirds will have the left lung affected, before the right. In other words observation seems to have established the fact, that in about two thirds of the cases of tuberclous phthisis, the morbid desposition *begins* in the left lung. This *predilection* then, of the morbid element for the left lung, may be considered, properly enough, *a law of pathology*. Similar remarks may be made in regard to very many other morbid phenomena. But we are not to forget, that however absolutely and positively we may express these general laws—when applied to vast aggregates—the practical and actual dealing of the physician is with individual cases:—and that here the law deduced from the great aggregate, as an average or proportionate result, may fail entirely in its application.

Such then, according to my apprehension of the subject, is the real character,—such are the legitimate objects of medical science—and such, as I have stated and explained them, the true methods of procedure in reaching them. But is this all? Are we to be tied down to this hard and dry study of *facts* and their *relations*—to this drudging and sterile investigation of phenomena, and their dependencies? Are we to have no *theory* of medicine? No system of pathology? Are we never to understand the *nature* of disease? Are we never to know the *modus operandi* of its causes and its remedies? Is no attempt to be made to reveal the essential and proximate causes of morbid processes, and the immediate agencies by which these processes are brought about?

In answer to these questions, which naturally enough suggest themselves, I will state to you, as briefly and explicitly as I can, my views upon this branch of the subject of my lecture. I have no objection to *theory* in medicine. I have no objection to hypothesis. Nay, more, I am willing to admit them here, as they are admitted into the other sciences, in the character of legitimate aids in our search after truth—in our study of phenomena. I have no wish to despoil them of a single right, or to deprive them of a single claim, which they can make good. But I insist on this—as has been done in the other sciences, that these aids of theory and hypothesis be kept in their proper places—and in medicine, most emphatically, these places are very subordinate and very humble ones. The difficulty has been, and is, that these powers have been placed in the very thrones of the medical realm, and the sceptre has been put into their hands:—it is high time, that these illegitimate usurpers were called to make way for the rightful sovereign.

The essential elements of science—of all science that is not absolutely abstract and metaphysical—are to be found in the phenomena of the particular science, whatever it may be, and in their various relations. Theory or hypothesis may be admitted, as a more or less probable, a more or less ingenious—a more or less plausible *explanation* and *interpretation* of these phenomena and of their relations. For instance, as I have already stated, the real and the true objects of the science of optics is to ascertain the properties and phenomena of light, and its relation to the different material substances, of which the universe is made up. Its sources—its composition—the velocity of its motion—the mode of its transmission from one object to another—the influence exerted upon it by bodies through which it passes—or against which it strikes:—its relation to heat, electricity and so on—these various phenomena classified and analysed, as far as they can be done—constitute the science of optics. But into this science—thus constituted—various theories or hypotheses have been introduced, by which *to account for—to explain*, and *interpret* the phenomena themselves. These theories are not phenomena, but assumptions. One is, that light is a natural substance, transmitted, bodily, from all luminous matter. This was the belief Newton. Another is, that the phenomenon of light is owing to a motion imparted to a subtle and invisible æther. This was the belief of Huyghens. Biot adopted a modification of the same theory. It has also been refined and developed by Dr. Young and Fresnel. The *theory* in these cases is *assumed*—entirely a speculation—in the absence of any actual evidence, as a convenient means of explaining the phenomena. This is all well enough. For this purpose there is no

objection to a theory. But let it be ever remembered that the science consists in the actual phenomena and their relations—and not in the hypothetical interpretation of these phenomena and these relations —however ingenious, however probable, however plausible these interpretations may be. The science is in the phenomena, not in the hypothesis. The latter you may destroy with impunity, or change at your pleasure, and the former will be in no way affected by the operation.

It would be very easy to derive precisely similar illustrations from most of the physical sciences, but the time which I have already occupied, and the time which I wish yet to occupy, admonish me to desist. I shall conclude the lecture with a few applications of the doctrine which I have stated to the science of medicine. Here, as in all the other sciences, the legitimate objects of investigation consist of the phenomena of disease, and their relations, and theory or hypothesis is to be admitted only as a more or less propable explanation of the phenomena. The phenomena are not dependent upon the theory—their existence, their laws, their relations, constituting the science, are wholly and absolutely independent of the explanation or the theory: they remain, whether the theory be present or away, whether it be sound or false. For instance, there is a very common and very important morbid process, to which we apply the term inflammation. What are the legitimate objects of research connected with this process. Manifestly its phenomena—its natural history—and nothing else. We wish to know its relations—its causes—the various forms which it assumes—under different circumstances—in the several organs and tissues—its complications—its terminations—its results—the influence exerted upon it by remedies and so on. There is only one method of arriving at all these results, and that is by the way of experience—observation.—These results, so arrived at, constitute the science of medicine, so far as inflammation is concerned. It is natural enough, however, that the mind should not rest fully satisfied with this knowledge. We wish to know by what agencies—through what recondite processes, these phenomena are brought about. We ask for the secret and invisible chain which somewhere runs through and binds them together. We demand the *how* and the *why* of these facts. To answer this end we resort to theory and hypothesis; in medicine, just as in optics or dynamics. So in inflammation, we have various theories, or interpretations of the phenomena—explanations of its nature. One theorist says the process consists simply in a morbid *augmentation* of the natural action of certain vessels----another says it consists in *diminution* of this action----a third says there is augmented activity in one stage and diminished activ-

ity in another----one places the morbid action in one set of vessels---a second in another set----and so on. It is not necessary that I should describe or enumerate all these theories of inflammation. I wish you to see clearly their true relation to the phenomena: and then you will be able to understand their real value. I wish you to see that they are simple interpretations of the phenomena and their relations: and that they have no claim whatever to the high character of constituent elements of science.

Many of the pathological laws of phthisis are now well ascertained. One of these is this, that the essential pathological lesion consists in the deposition, in the lungs, of an extraneous, morbid matter, characterized by certain physical and chemical properties, to which we give the name of tubercle. This is the law—this is the observed phenomenon—thus constituting an element of science. But what is the *nature* of the *morbid process* which results in this deposition? How is the deposition to be explained? Here come in our theories. One school of pathologists says, that the tubercular deposite is always the result of an *inflammatory* process—this is the opinion of Broussais, Bouillaud, Gallup, Gross, and many others. Another school says there is no evidence of this, and that the deposite is the result of morbid actions not inflammatory. Well! let us explain, interpret, theorise—if we will; but let us never forget, that the theory *does not constitute the science.* The investigation of the phenomena constitutes the science and the labor—the theory is only speculation and pastime.

Another pathological law of this disease is, that the tubercle manifests a strong predilection for the summit of the lungs. The deposition almost always commences here. It is almost invariably found most advanced in the upper part—in the apex of the lungs. Such is the phenomenon, ascertained by simple experience, so nearly invariable as to constitute one of the most general laws of pathology. Why is this so? Now comes in the theory. There is no obvious reason to be found in the structure of the lungs. There is no light shed upon the subject by analogy. Dr. Morton says, the reason is because the lungs have less motion here than in their lower portions. Well! if he and others are satisfied with this explanation, I have no objection. It may be correct—it may not be. Only let it be regarded as an explanation—as a theory—and no great harm will come from it in any event.

I will not multiply these illustrations any further. I have not time to do so; and it could hardly be necessary, even if I had. I hope I have succeeded in making myself understood. I have a strong convic-

tion of the soundness and the importance of the views which I have stated, and I shall refer to them often in the course of our future investigations. My relation to you imposes upon me two duties — one of these, the great and leading one, is the clear and full communication of the results of our researches thus far in regard to the phenomena and the management of disease: the other, and it would hardly be extravagant if I were to call it almost equal in importance to the first, is to give you sound and philosophical conceptions of the nature and objects of medical science, and of the best methods of attaining these objects.

I hope I shall not fail in either of these duties. I may not realize the high ideal of excellence, which rises up before me in my hours of meditation, but I trust through diligence on my part, and attention on yours, our time will not be passed unprofitably together. I was about to say, however, that I should deprecate the consequences, upon your future career, of a failure in the second duty, more than of a failure in the first. The phenomena of disease are very extensively recorded—the same is true of their modes of management. These records, to a considerable extent, are accessible to you. From these records, and from your own observation, you would soon supply any deficiencies which might exist in my own details, if unhappily any such should exist. But it is impossible to estimate the evils—the obscurity—the confusion—the uncertainty—that may attend all your investigations, growing out of a vicious and mistaken conception of your science and its relations. The stream is poisoned at its spring head, and its waters will flow on, turbid and muddy, to the ocean.

Lord Bacon, it is well known, added but little to the actual stock of human knowledge: he is not known for any brilliant discoveries:—he made no rich contributions to the treasury of science: he brought no costly gifts to its altar:—but he gave it the great impulse which has carried it to its present proud elevation; and he did this simply by defining and demonstrating its true character and objects; and the best and only methods of pursuing them. God forbid that I should be thought so presumptuous as to institute any ridiculous comparison between him and the obscure individual who now addresses you; I claim to be only a humble but earnest disciple of his immortal philosophy. But I am fully persuaded that one of the great needs of our age and our land, so far as medical science is concerned, is a fuller recognition and practice of the true, simple, and rigorous laws of the Baconian philosophy.

These laws, although recognized in form, have never, as a general rule, been truly conceived and faithfully followed. It is one of the

most amusing things, in the modern literature of our science, to see how universally this is true. All the systematists, from Brown to our own countrymen and contemporaries, whom it is not necessary to name, begin with a dissertation upon the barrenness and the dangers of speculation—upon the importance of adhering to what they call inductive reasoning; and then, forthwith, as though they had satisfied their consciences, away they go into the wildest regions of fable and romance.

I feel unwilling to close this lecture without making one or two qualifying remarks. I do not wish to indulge anything like a sweeping and indiscriminate condemnation of the spirit of all past medical philosophy. I do not forget, that, long ago, medicine had its Hippocrates, its Morgagni, its Haller, its Sydenham, and that through the labors of these, and of others like them, more or less imbued with the spirit of the Baconian method, there has been gradually building up, for our own use, a noble body of sound and practical wisdom. I have no wish to contemn the reverend fathers of our art. All along the pathway of our science through the ages—tortuous, rugged, enveloped in mist and shadows as it has generally been—here and there, amid the obscurity, have true lights been kindled and set up, shining out on the surrounding darkness with a radiance as serene and steady as that of the everlasting stars. Hearty thanks and high honor be to all those, who from the time of Hippocrates to our own, by diligent observation, have done their parts in making our science and our art what they are.

I wish to remark further, that there has never been a time when we had as good cause for self-congratulation as we now have. In the course of this lecture I have expressed myself freely respecting the short-comings and the vices of medical philosophy, and the disastrous results of these upon practical medicine. I have done this from an honest conviction of its truth, and from a strong feeling that in no other way could I do as much service to you.

Not less strong than this feeling in regard to the errors of the past, and even of the present, is my conviction of the certain progress and improvement of medicine. The prospect of the future, which presents itself to my contemplation, has more in it of vision than of faith. I have an undoubting confidence, resting alike on the experience of the past and on the essential nature of things, that our science and art are destined to go on in a course of great and almost indefinite advancement. Never before, within the same period of time, during the existence of the science, has it made such rapid and sure progress as for the last forty years. Within the last twenty years, especially, have the best minds in the profession been devoting themselves, with a singleness of pur-

pose; with a patient industry; with an untiring zeal, and with a lofty and disinterested love of truth, before unequalled—before unknown—to a thorough, comprehensive study of disease. Never before has such searching inquisition been made into the phenomena and relations of morbid action; and never before with such triumphant results.

Every where the time is full of the brightest promise, and especially so is it here. Some of the most common, the most violent, and of course the most important and interesting forms of disease, as they occur in and are modified by our own climate and position, are yet to be fully studied and compared with their cognate and analogous forms abroad. And this can only be done in the spirit of that philosophy, which it has been the object of this lecture to define. Guided by this philosophy, I cannot conceive a richer field than that which is spread out before the American physician. Already have there entered upon it ardent and active laborers, not a few, thoroughly furnished to their work. They are taking possession of its treasures:—they are writing their names on its history:—they are gathering garlands for their temples, which shall never wither away. Already have some of our young men, even, solved important problems in pathology, which had foiled the skill, and eluded the dexterity of our British brethren.* Happy and fully satisfied shall I be, if I can, even in the slightest degree, be instrumental, in preparing you, either by infusing into your minds the right spirit, or furnishing means to enable you to go forth and occupy, worthily, the rich inheritance which awaits you.

As in the direction of all our other relationships—social, moral, economical—the future opens itself before us in *two* paths, so does it here. One of them, the great and common highway of *False Philosophy*, is broad, well trodden, and shows itself fair to the eye, *at its entrance*. Flowers blossom along its borders: syren voices sing the safety and the delights of its course—the beauty of the scenery through which it runs, and the grandeur of the Temple of Truth to which it leads. Multitudes have thus been led, and multitudes are still led to enter upon this enchanted ground. But the pathway, so pleasant at its beginning, soon loses itself in uncertain wanderings and in a constantly thicken-

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* Dr. GERHARD, of Philadelphia, was the first to point out the difference, both in symptoms and pathology, between the true British typhus, and the common, continued, typhoid fever of the United States. In the whole range of practical medicine, there is no single circumstance, which, both to the British and American practitioner, has been the occasion of so much obscurity and confusion, as the confounding of these two diseases, resembling each other in many respects, but still differing from each other, as clearly and as distinctly, as measles and scarlatina.

ing obscurity. The melody of the morning outset is soon changed to dissonance. Discordant and jarring voices, issuing from the thousand and one belligerent and angry schools, into which the travellers are divided, make an utter Babel of the place. Every leader of every sect proclaims his own little rush light—kindled at the lantern of some will-o'-the-wisp—and glimmering feebly in the fog—to be the true sun of the medical world; and his own crooked and misty path of the confused labyrinth, in whose mazes of cloud and quagmire they all wander, to be the only sure and safe road to the truth.

The other is the pathway of *True Philosophy*—in our own science, as in all the rest—narrow and rugged at its entrance, dimly lighted, it may be, and filled with obstacles which it is difficult to surmount. But nevertheless, fear not, and be wise in your choice. This pathway shall widen as you proceed, and every successive step, in your onward and upward career, shall be surer and easier than the last. The light shall brighten as you go on, the earth shall grow firmer under your feet, the heavens shall spread bluer and broader over your heads. The horizon shall widen around you, and every hour shall bring within the scope of your vision objects of new and boundless interest. You will find yourselves, too, in a small, perhaps, but a glorious company, led on, in the far distance, with his flowing beard, and his venerable form, by the old Physician of Cos. It is the path which was trodden by the Sydenhams, the Hallers, the Hunters, the Bichats. It is the path which led Harvey to the most brilliant achievement in the annals of physiological science. It is the path which led the more fortunate Jenner to that discovery, which has embalmed his name in the gratitude and the love of all countries, and of all times. It is the path which led Newton—*clarum et venerabile nomen*—up, UP, to that loftiest pinnacle ever reached by uninspired humanity, crowned with light of ineffable brightness, where the veil, which, from the creation of the world, had hung before the universe, hiding its wonder and its mystery, was rent, and man was suffered to look, for the first time, out upon the beauty, the majesty, the unchangeable order, of the handiwork of God. Into this path, and not into the other, be it our effort and our happiness to enter!

Exploration Mobile
Fifty Years of Ohio
Milton
Holmes on Auscultation
Worcester Insan. Asylum
Amer. Philos. Soc.
Breckinridge's 2d Defence
Luzenberg's Trial N.O.
McClintock's Introd.
Ingalls Scarlatina
Pennock & Moore's Exps.
Catalogue Med. Inst. 1840
Drake's valedictory
Catalogue Med. Coll. O. 1840-1
Med. Soc. Ten. 1840
Bartlett's Introd. 1841.